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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/874,036	06/06/2001	Takashi Yamaguchi	108419-00020	7608

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EXAMINER

GARBER, CHARLES D

ART UNIT PAPER NUMBER

2856

DATE MAILED: 07/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/874,036

Applicant(s)

YAMAGUCHI ET AL.

Examiner

Charles Garber

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5 and 7-9 is/are pending in the application.
- 4a) Of the above claim(s) 7-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/12/2003 has been entered.

Response to Arguments

Applicant's arguments with respect to claims 1 and 4 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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Claims 1, 2⁴ and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Busato et al. (US Patent 5,957,115) in view of Cook et al. (US Patent 6,283,097).

Regarding claim 1, Busato discloses a pulse interval leak detection system including evaporative fuel processing system with canister 1 with medium 10 for absorbing fuel vapors (column 3 lines 65-66) from fuel tank 2. Canister 1 is also connected to an engine intake manifold 6 supplying the evaporative fuel absorbed in the canister to the engine via conduits 7 and 9. Busato also discloses a pressure sensor 14 on top of the fuel tank (see figure 1) which is means detecting pressure within the evaporative fuel processing system.

Busato also includes a canister purge solenoid valve 8 which is pressure reduction means for reducing the pressure within the evaporative fuel processing system until the detected pressure within the evaporative fuel processing system becomes equal to a predetermined negative pressure shown in figure 4 as an upper regulating limit URL. Negative pressure is introduced from the intake system as in the instant invention. (column 1 line 66 to column 2 line 2)

Negative pressure is introduced from the intake system by the purge valve 8 (column 4 lines 28-36). When the pressure sensor senses that the URL has been reached the purge valve is operated closed. This is shown in figure 4 as the "Initial Pressurization Time" and ends at time equal 5 seconds in the example. If a leak is present, vacuum begins to be lost. When the vacuum sensed by the pressure sensor reaches the Lower Regulating Limit (LRL) the computer commands the purge valve to open which causes vacuum to increase again to the URL.

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This is equivalent to the negative pressure introduction means for introducing the negative pressure from the intake system into the evaporative fuel processing system after the pressure reduction by pressure reduction means, additionally or further reducing the pressure in the test space as in the instant invention.

Busato further discloses computer 12 which determines a leak and leak size based on the interval between successive negative pressure introduction cycles. (column 5 lines 22-38) Examiner considers that Busato must inherently detect the pressure LRL 'during' or at least substantially simultaneous with the introduction of the negative pressure. The limit could not be reached otherwise. Examiner considers the computer 12 must direct the valve 8 to shut based on the pressure being sensed and will not take an action to shut the valve unless the sensed pressure has reached the target pressure LRL. Therefore, the computer 12 is considered equivalent to leakage determination means for determining that there is a leak in the evaporative fuel processing system when the detected pressure detected 'during' the introduction of the negative pressure from the intake system by said negative pressure introduction means is higher than a predetermined leakage reference value as in the instant invention.

Busato however lacks the negative pressure introduction means proceeding under predetermined conditions, which in the context of the specification means continuing only if the conditions for purging and testing are suitably not generating excess vapor. Busato only speaks generally about purging when conditions are suitable (column 1 lines 25-30), not expressly about conditions for purging for purposes of pressure decay testing.

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Cook teaches allowing "an evaporative emission space to be quickly pressurized to appropriate test pressure at the beginning of a leak detection test, but will abort the test if conditions not conducive to obtaining an accurate result are discovered." (column 1 lines 37-54)

It would have been obvious to one having ordinary skill in the art at the time of the invention to continue a leak test only if proper conditions exist in order to "assure test accuracy by providing substantial insensitivity to extraneous disturbances during a test"

As for claim 2 Busato discloses the effectiveness of the inventive system and method is predicated on reasonable stability of the pressurizing source. Stability may be defined as the state or quality of being stable, especially constancy of character; steadfastness. Examiner considers that Busato is therefore disclosing the advantage of using a constant pressure source in such a test. In the case of a negative pressurization system, Busato recommends a pressure regulating purge valve as in US Patent 5,069,188 which inherently provides a constant flow rate at idle speeds or constant rate at any given duty beyond idle (column 6 lines 9-21).

Claims 4 and 5 are considered to be substantively equivalent to claims 1 and 2 as discussed above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Garber whose telephone number is (703) 308-6062. The examiner can normally be reached on 6:30 a.m. to 3:00 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7725 for regular communications and (703) 308-7725 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.

A handwritten signature in black ink, appearing to be 'cdg' followed by a stylized flourish.

cdg
June 26, 2003